LBI-30868E

ERICSSON

Mobile Communications

MASTR® II

BASE STATION 50 Hz POWER SUPPLY
19D430272G3 & G6
(HUM SUPPRESSION
OPTIONS 9651-9655, 9660)

Maintenance Manual

ERICSSON

Ericsson GE Mobile Communications Inc.
Mountain View Road • Lynchburg, Virginia 24502

Printed in U.S.A.

LBI-30868

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SPECIFICATIONS*

OUTPUT VOLTAGE	
Transmitter Supply	13.4 Vdc @ 27 Amperes
Receiver Supply	15.5 Vdc @ 3 Amperes
INPUT VOLTAGE	100/110/123.5/200/220/247 Vac 50 Hz only
LOAD DUTY CYCLE	Continuous @ ±10% Line Operable @ ±20% Line
Dimensions (H x W x D)	7-1/4" x 19" x 10-1/2"
Weight	65 lbs.

* These specifications are intended primarily for the use of the serviceman. Refer to the appropriate Specifications Sheet for the complete specifications.

WARNING

No one should be permitted to handle any portion of the equipment that is supplied with high voltage; or to connect any external apparatus to the units while the units are supplied with power. KEEP AWAY FROM LIVE CIRCUITS.

High-level RF energy in the transmitter Power Amplifier assembly can cause RF burns. KEEP AWAY FROM THESE CIRCUITS WHEN THE TRANSMITTER IS ENERGIZED!

DESCRIPTION

The General Electric MASTR® II Base Station 50 Hertz Power Supply is provided in a 30 Ampere chassis model for operation with a variety of 50 Hz input voltages. Jumper connections, located on the back of the power supply front panel (A802), must be connected for the desired input. These connections are shown on the Schematic Diagram (see Table of Contents). Unless otherwise specified, the supply is connected for 123.5 VAC ±10%, 50 Hz at the factory.

The input voltage is stepped down to 12 Volts by a ferroresonant transformer which provides line regulation of ±2% for a ±20% primary change. A power switch and primary and secondary fuses are located on the power supply front panel. A high-current fuse for the PA supply is located on the rear panel of the Power Supply. The rear panel hinges to provide access to the power supply components for in-rack servicing.

CIRCUIT ANALYSIS

When the power supply ON-OFF switch S1 is in the ON position, the input voltage is connected across the primary of power transformer T803. The power transformer is a ferroresonant type which has inherent good line regulation so that no additional high-current regulators are required. The output voltage will change a maximum of 1.6% per each percent of change in lines frequency with nominal line voltage input. C801 serves as a resonating capacitor across the secondary taps of the transformer.

The transformer steps the input voltage down to 12 Volts and this lower voltage is applied to the bridge rectifier composed of CR1, CR2 (mounted on heat sink A803) and CR3, CR4 (mounted on heat sink A805).

The rectified output of the bridge is fed to the low- and high-current filters (see Figure 1). The high-current filter consists of C802, C803 and L801. R801 serves as a bleeder for the high-current supply and the output of the filter is applied through the high-current fuse (F801) to the station transmitter power amplifier. Output connections are made to terminals 2 and 3 of the high-current fuse block. The high-current output is rated at 13.4 Volts, 27 Amperes.

The low-current filter is composed of C802, L802 and C804. The low-current supply is rated at 13.4 Volts, 3 Amperes and supplies the station transmitter exciter and receiver circuits. The output of the low-current supply is fused by F3, located on front panel A802. External connections are made at J801. Diode CR803 helps suppress high voltage transients in the high-current supply.

RELAY CONTROL BOARD (HUM SUPPRESSION OPTIONS 9651-9654)

When the hum suppression options are used, the Relay Control Board 19C328488G1 switches the resonating capacitor into the circuit, when the microphone is keyed, to quiet the power supply.

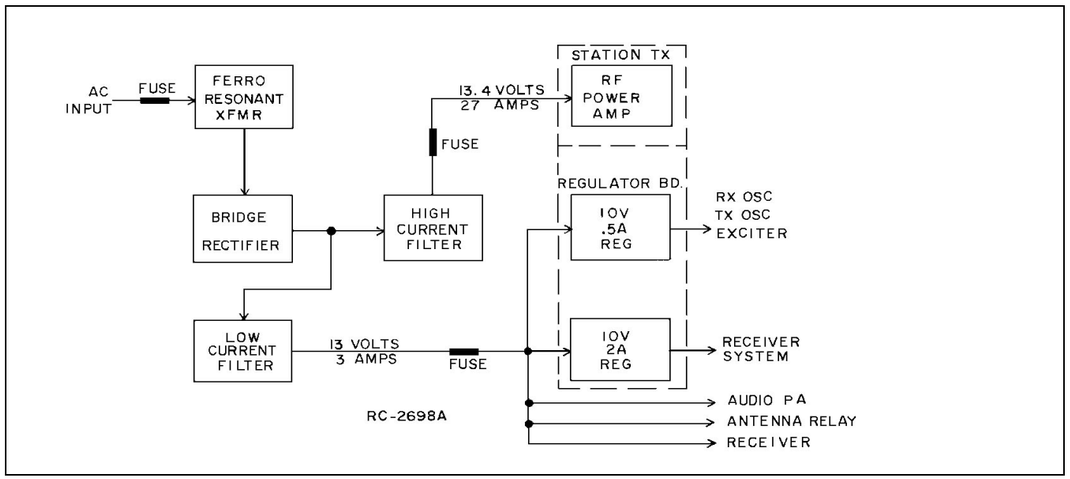


Figure 1 - Power Distribution

LBI-30868

When the microphone is unkeyed, Q3 is biased off, and cannot supply base current to turn on Q4. With Q4 off no energizing current is supplied to K801 and the resonating capacitor C801 is out of the circuit. this is the condition for quiet operation of the supply.

When the microphone is keyed, Q3 is biased on through R4, and Q4 is biased on through "Q3, R6 and R7. With Q4 turned on K801 is energized and the capacitor C801 is placed across the #9 and #10 winding of the transformer T803.

At the instant Q3 turns off C2 and C6 are in a discharged condition. While they are charging up they furnish base current to keep Q4 turned on, and K801 energized, for a few seconds. This delay prevents excessive keying of the relay during fast transmit-receive exchanges.

The bridge rectifier, CR1 through CR4, is connected across the resonating capacitor C801 and delivers a fullwave unfiltered voltage to the divider R14 and R13. This voltage is delivered to the base of Q4 through C1 and does not allow Q4 to turn off until C801 has maximum voltage across it. This action prevents the relay from opening with high current through C801 and minimizes burning of the contacts.

The circuit comprised of VR3, Q5 and Q6 is for overvoltage protection and is normally inactive. It will be activated only if the power supply output voltage exceeds about 18V. This could happen with excessive input voltage or lightning surges. When the voltage at the emitter of Q4 causes VR3 to conduct the resulting voltage at the junction of R8 and R10 will turn on Q6. The current through Q6 will turn on Q5 and Q5 will turn on Q4, there-by energizing K801. Once the circuit is activated, C801 will be locked into the resonating circuit and will remain in this condition until the input voltage to the supply is turned off and then on again. During this period all functions of the radio will be normal, but the power supply hum will be audible.

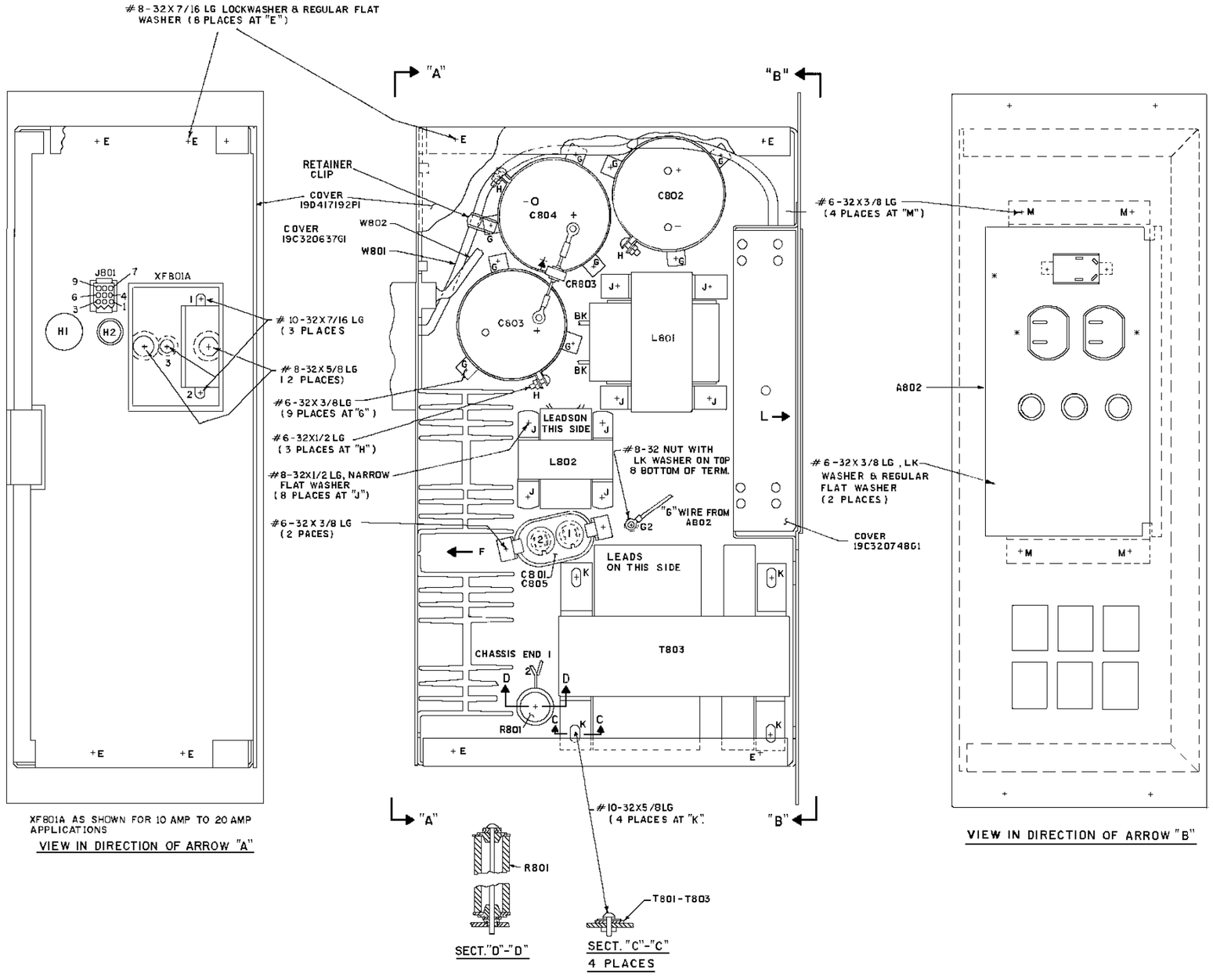
Zener VR2 provides stable base voltage for Q3.

TROUBLESHOOTING PROCEDURE

SYMPTOM	PROCEDURE
No output voltage at J801-1 and J801-5	Check the following: A1. Proper input voltage on TB2-4 & TB2-5. A2. Open F1 or F3. A3. Open T801, S1, L802, CR1, CR2, CR801, CR802 A4. Shorted T801, C801, C802, C804.
No output voltage at F801-2 and 3	Check the following: B1. Open F801, L801. B2. Shorted C802, C803.
Either output greater than 15.5 Volts	Check the following: C1. Open C801, R801. C2. Line Frequency.

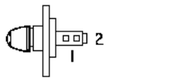
HUM SUPPRESSION OPTIONS

OPTION	DESCRIPTION
9651	Deletes the 18 Amp 60 Hz supply, 19D430272G2. Adds the 30 Amp 50 Hz supply with hum suppression, 19D430272G6.
9652	Deletes the 30 Amp 60 Hz supply, 19D430272G1. Adds the 30 Amp 50 Hz supply with hum suppression, 19D430272G6.
9653	Deletes the 18 Amp 60 Hz supply with hum suppression, 19D430272G5. Adds the 30 Amp 50 Hz supply with hum suppression, 19D430272G6.
9654	Deletes the 30 Amp 60 Hz supply with hum suppression, 19D430272G4. Adds the 30 Amp 50 Hz supply with hum suppression, 19D430272G6.
9655	Deletes the 30 Amp 60 Hz supply with hum suppression, 19D430272G4. Adds the 30 Amp 50 Hz supply 19D430272G3.
9660	Deletes the 18 Amp 60 Hz supply with hum suppression, 19D430272G5. Adds the 30 Amp 50 Hz supply 19D430272G3.



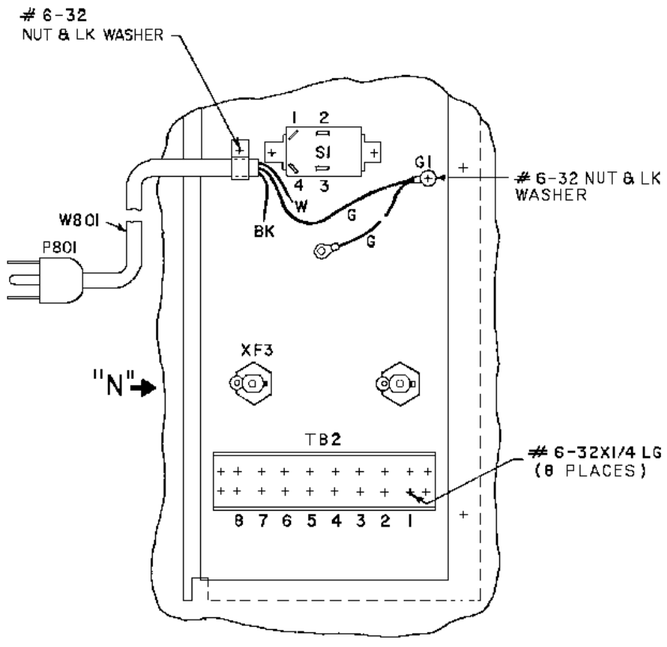
50 Hz POWER SUPPLY
19D430373G3 & G6

(19D430373G3 & G6)

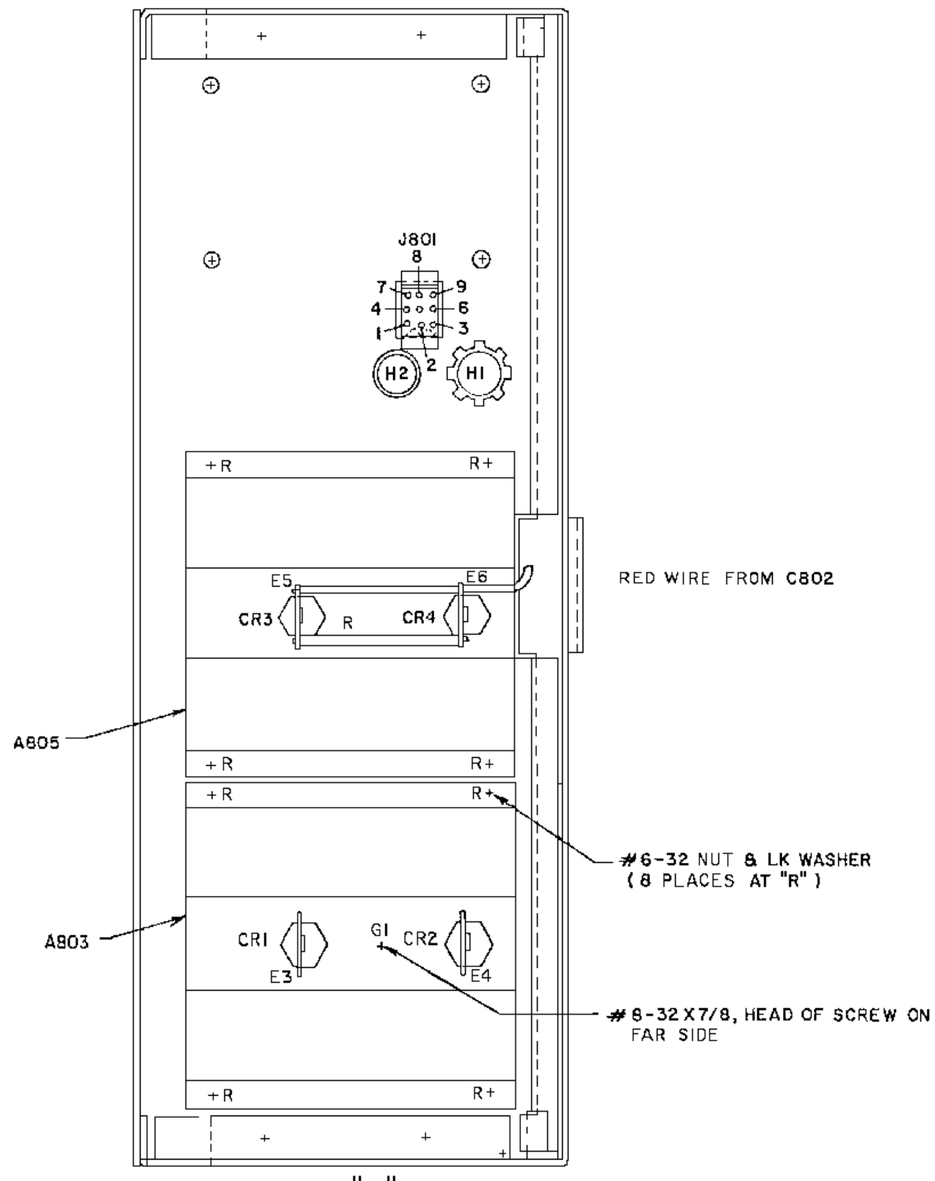


VIEW-"N"

TERMINAL DENTIFICATION
XF3 ON A801 & A802



PART OF PANEL A802
VIEW IN DIRECTION OF ARROW "L"

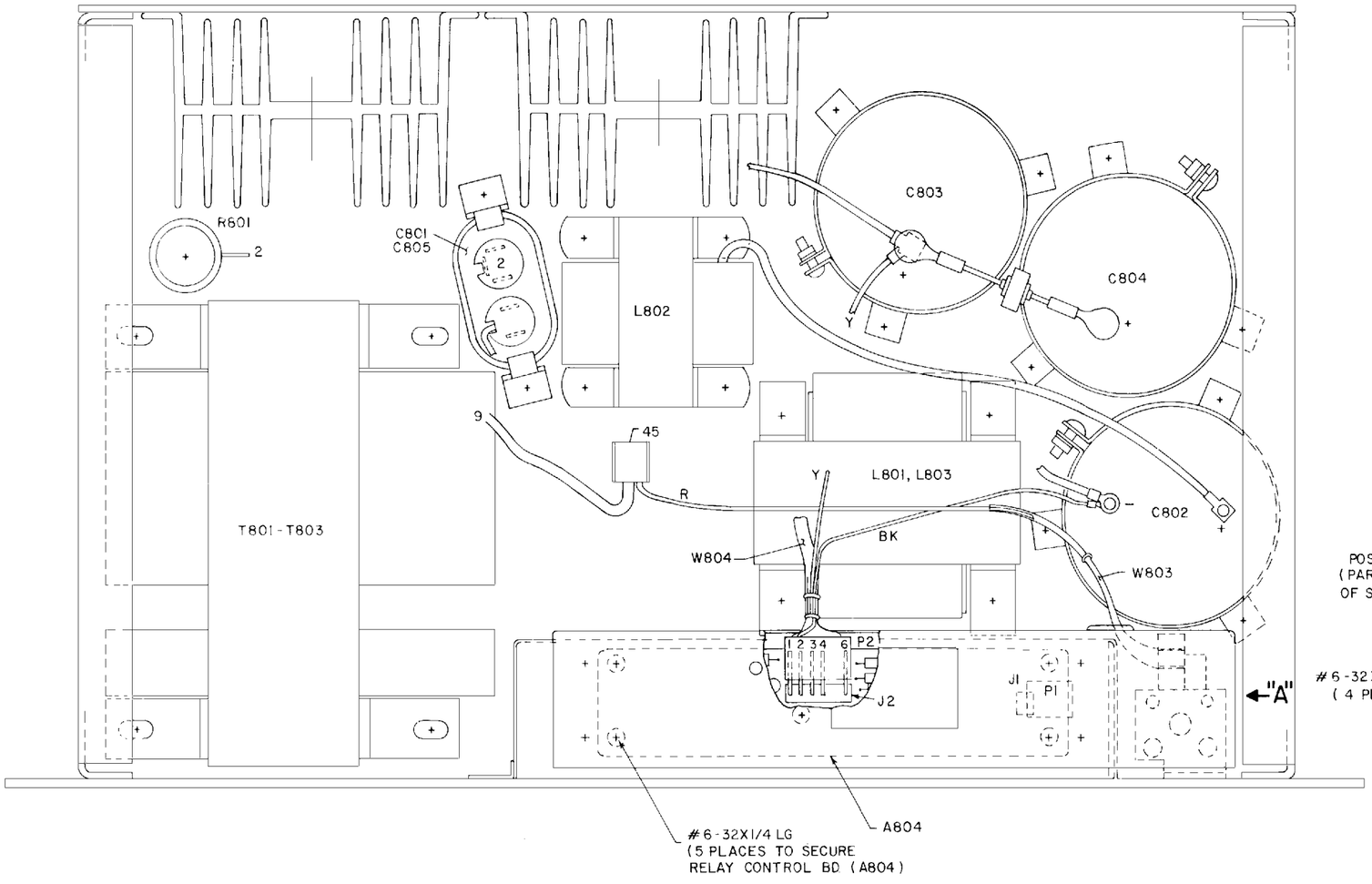


VIEW-"F"

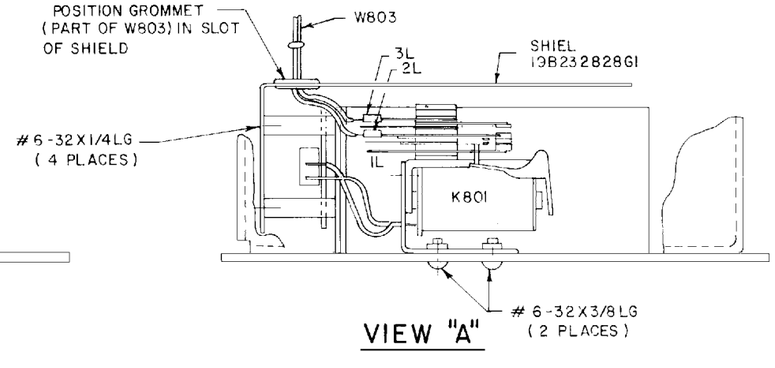
VIEW IN DIRECTION OF ARROW "F"

50 Hz POWER SUPPLY
19D430272G3 & G6

(19D432022, Sh. 5, Rev. 1)



VIEW WITH TOP COVER REMOVED

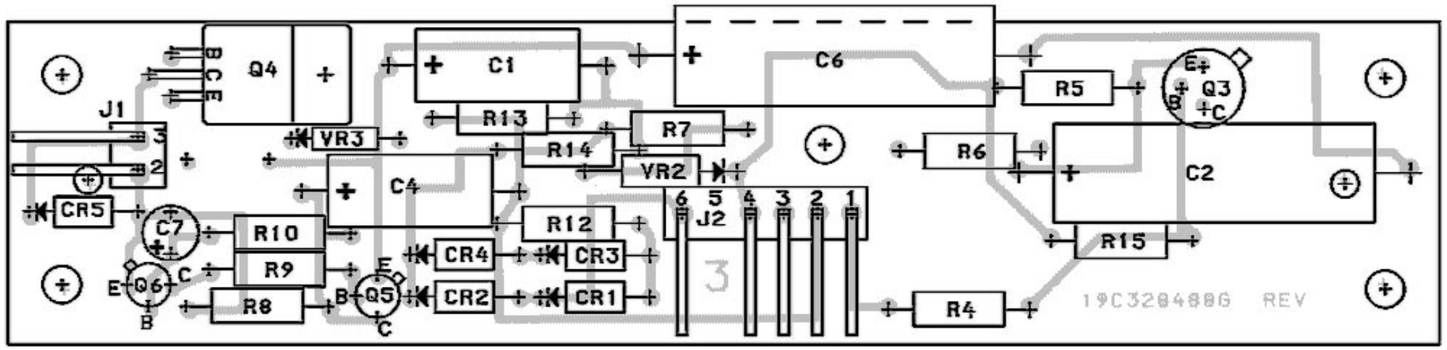


VIEW "A"

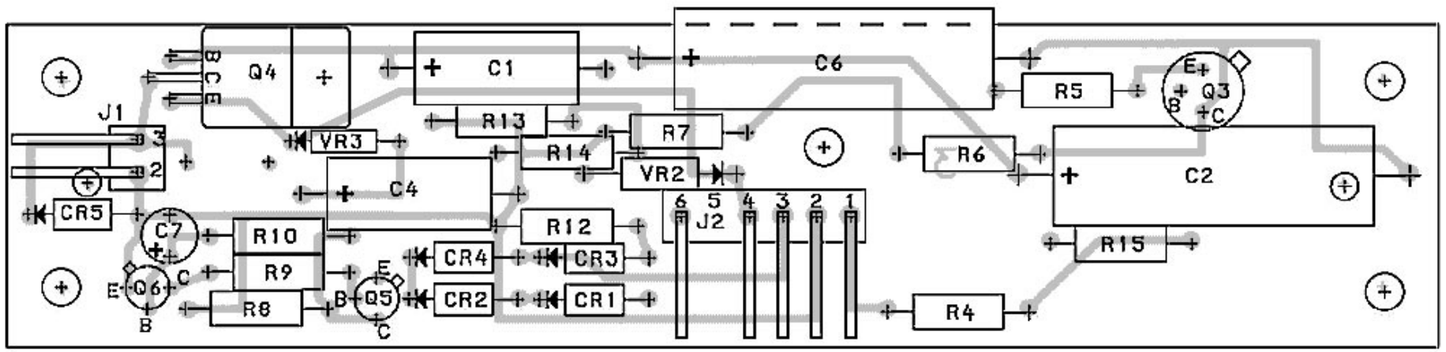
WITH HUM SUPPRESSION.
19D430272G4, G5 & G6

50 Hz POWER SUPPLY
19D430272G3 & G6

(19D432022, Sh. 3, Rev. 0)

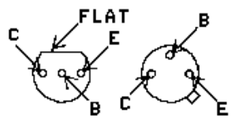


(19C328490, Rev, 2)
(19B232763, Sh. 1, Rev. 3)



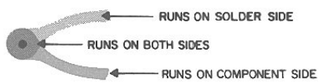
(19C328490, Rev, 2)
(19B232763, Sh. 2, Rev. 3)

LEAD IDENTIFICATION
FOR Q1-Q6

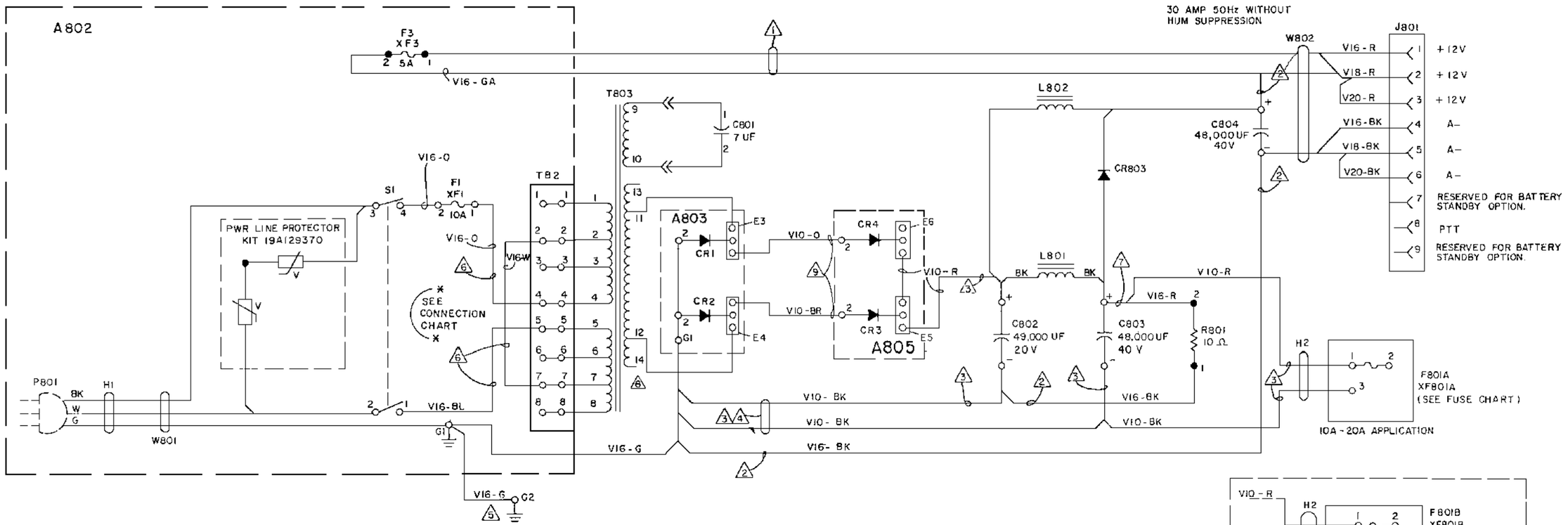


IN-LINE OR TRIANGULAR
TOP VIEW

NOTE: LEAD ARRANGEMENT, AND NOT



RELAY CONTROL BOARD
19C328488G1
*** * * * * * * ***



FUSE APPLICATION CHART		
BAND	POWER	FUSE
LOW	50 W	15A
LOW	70 W	20A
LOW	100W	35A ▲
HIGH	35 W	15A
HIGH	65W	20A
HIGH	110W	35A ▲
450	20W	10A
450	40W	15A
450	75W	35A ▲
450	100W	35A ▲

220 VAC 50 HZ
* CONNECTION SHOWN

INPUT VOLTAGE	CONNECT AT T82
100 VAC 50 HZ	4 TO 6 & 3 TO 5
110 VAC 50 HZ	2 TO 5 & 4 TO 7
123.5 VAC 50 HZ	1 TO 5 & 4 TO 8
200 VAC 50 HZ	3 TO 6
220 VAC 50 HZ	2 TO 7
247 VAC 50 HZ	1 TO 8

POWER SUPPLY IS WIRED FOR 220 VAC, 50 HZ OPERATION. FOR OPERATION ON OTHER INPUT VOLTAGES, REFER TO CONNECTION CHART.

SEE APPLICABLE PRODUCTION CHANGE SHEETS IN INSTRUCTION BOOK SECTION DEALING WITH THIS UNIT, FOR DESCRIPTION OF CHANGES UNDER EACH REVISION LETTER.

THIS ELEM DIAG APPLIES TO	
MODEL NO	REV LETTER
PL19D430272G3	A

NOTES:

1. THESE WIRES MUST BE ROUTED SEPARATELY FROM OTHER WIRING OF A801.
2. TERMINATE WITH 19B209260P12.
3. TERMINATE WITH 19B209260P11.
4. TERMINATE THESE 2 WIRES AT A803-G1 UNDER THE HEAD OF THE SCREW.
5. TERMINATE END AT A802-G1 WITH 19B209268P101 & AT G2 WITH 19B209268P103.
6. TERMINATE WITH 19B209260P107.
7. TERMINATE BOTH WIRES IN SAME TERMINAL 19A115799P1.
8. TRANSFORMER WINDINGS #13 & #14 ARE USED ONLY IN POWER SUPPLIES WITH OPTIONS 9669 & 9670 (STANDBY BATTERY CHARGER).
9. TERMINATE WITH TERMINAL 19B209268P107.

50 Hz POWER SUPPLY WITHOUT HUM SUPPRESSION 19D430272G3

(19D430303, Rev. 3)

MASTR II 50 Hz POWER SUPPLY
19D430272G3
ISSUE 3

SYMBOL	PART NUMBER	DESCRIPTION
A802		**50 Hz POWER SUPPLY AC PANEL 19C320779G2**
		—— FUSES ——
F1*	7484390P1	Cartridge, quick blow: 10 amps at 250 v; sim to Bussmann ABC10 or Littelfuse 314010.
	7484390P4	Cartridge, quick blow: 8 amps at 250 v; sim to Bussmann ABC08 or Littelfuse 314008. (Used earlier than REVA).
F3	1R16P8	Cartridge, quick blow: 5 amps at 250 v; sim to Bussmann MTH-5 or Littelfuse 312005.
		—— SWITCHES ——
S1	19B209498P1	Push: DPST, 20 amps at 220 VRMS; sim. to McGill 0811-0188.
		—— TERMINAL BOARDS ——
TB2	19C301087P4	Phenolic: 8 terminals; sim to GE CR151D.
		—— FUSE SOCKETS ——
XF1 and XF3	403740P2	Fuseholder: 15 amps at 250 v; sim to Littelfuse 342001.
		—— MISCELLANEOUS ——
	19B226097G2	Cover.
	19B209920P107	Terminal: Solderless. (6 required).]
	NP276466	Nameplate. ("WARNING" tag).
A803		**HEAT SINK 19C320836G1**
		—— RECTIFIERS ——
CR1 and CR2	19A116524P2	Silicon: sim to 1N2158R, includes N210P20B6 nut.
		—— MISCELLANEOUS ——
	19B226005G1	Heat Sink.
	19A115275P5	Insulator: disk. (Used with CR1 and CR2).
	N210P20B6	Nut: Hex. (Secures CR1 and CR2 to Heat Sink).
	N403P25B6	Lockwasher. (Used with CR1 and CR2).
	19A142689P1	Terminal. E3 and E4.
	N81P13006B6	Screw: Machine. (Secures terminal to CR1, CR2).
	N207P13B6	Nut: Hex. (Secures terminal to CR1, CR2).
	N404P13B6	Lockwasher. (Used with terminal).

SYMBOL	PART NUMBER	DESCRIPTION
A805		**HEAT SINK 19C320836G2**
		—— RECTIFIERS ——
CR3 and CR4	19A116524P2	Silicon: sim to 1N2158R, includes N210P20B6 nut.
		—— MISCELLANEOUS ——
	19B226005G1	Heat Sink.
	19A115275P5	Insulator: disk. (Used with CR3 and CR4).
	N210P20B6	Nut: Hex. (Secures CR3 and CR4 to Heat Sink).
	N403P25B6	Lockwasher. (Used with CR3 and CR4).
	19A115276P4	Insulator: Washer. (Used with CR3 and CR4).
	N402P11B6	Washer. (Used with CR3 and CR4).
	19A142689P1	Terminal. E5 and E6.
	N81P13006B6	Screw: Machine. (Secures terminal to CR3, CR4).
	N207P13B6	Nut: Hex. (Secures terminal to CR3, CR4).
	N404P13B6	Lockwasher. (Used with terminal).
		—— CAPACITORS ——
C801	19A134574P2	Liquid: 7 µF ±5%, 660 VRMS; sim. to GE 26P664PB.
C802	19A134033P1	Electrolytic: 49000 µF +50% -10%, 20 VDCW; sim. to GE 92F180ANB.
C803 and C804	5496520P19	Electrolytic: 48000 µF -10 +100%, 40 VDCW, sim to 86P561M.
		—— RECTIFIERS ——
CR803	19B226282G2	Silicon.
		—— FUSES ——
		Note:To select the correct fuse for P801, refer to the chart on the schematic diagram.
F801	1R11P3	Quick blowing: 10 amps, 250 v; sim to Bussman NON10.
	1R11P4	Quick blowing: 15 amps, 250 v; sim to Bussman NON15.
	1R11P5	Quick blowing: 20 amps, 250 v; sim to Bussman NON20.
	1R11P6	Quick blowing: 25 amps, 250 v; sim to Bussman NON25.
	1R11P7	Quick blowing: 30 amps, 250 v; sim to Bussman NON30.
	1R11P8	Quick blowing: 35 amps, 250 v; sim to Bussman NON35.
		—— JACKS ——
J801		(see W802).

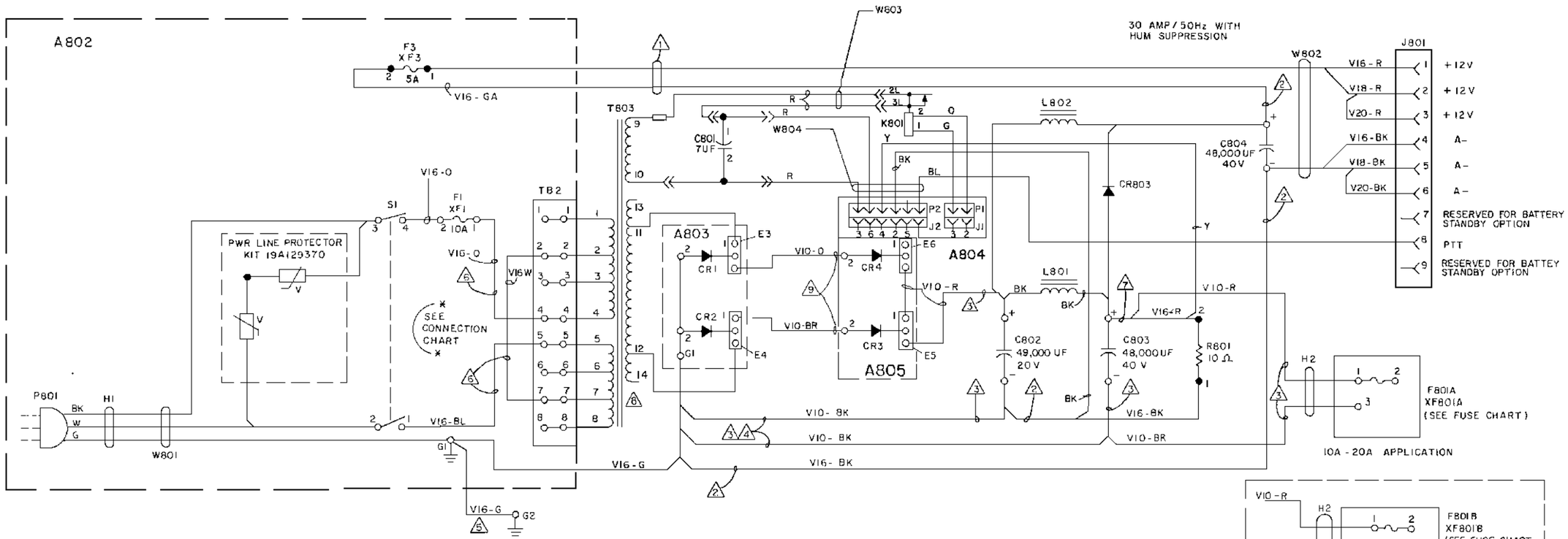
SYMBOL	PART NUMBER	DESCRIPTION
		—— INDUCTORS ——
L801	19B209497P1	Reactor: 1 µH minimum, 27 amps, .01 ohms max.
L802	19B226151G1	Reactor: 10 µH minimum, 2.5 amps, .1 ohms max.
		—— RESISTORS ——
R801	2R17P21	Wirewound: 10 ohms ±5%, 50w; sim to Ward Leonard K41389-1.
		—— TRANSFORMERS ——
T803	19C330340G3	Power: 50 Hz, Primary input: 100/110/123.5/200/220/247, ±20% Secondary output A: 3.0 amps. Secondary output B: 13.4 at 27.0 amps.
		—— CABLES ——
W801	19B233188G1	Cable: Power cord, 3 conductor. (Includes P801).
W802		**CABLE ASSEMBLY 19B233189G1**
		—— JACKS ——
J801		Connector includes:
	19B209288P3	Shell.
	19B209288P1	Contact, electrical: wire size No. 14-20 AWG; sim to Molex 02-09-1101. (6 required).
	7491823P9	Terminal: Solderless.
		—— FUSE SOCKETS ——
XF801A	19B216021G7	Fuseholder. Includes:
	19D413045P1	Base.
	19B205950P1	Fuse clip. (2 required).
	N117P15006B6	Screw: tap. (2 required).
	19A115942P1	Insert: threaded. (2 required).
		—— MISCELLANEOUS ——
	19C320748G1	Cover. (A802).
	19C320637G1	Cover: Rear. (Mounts XP801 and J801).
	19D417192P1	Cover: Bottom.
	7479571P19	Retainer: Strap; sim to Sprague 4586-2. (Used with C802 thru C804).
	7776855P37	Retainer: Strap; sim to Hudson Falls 302C920P211. (Secures C801; 2 required).
	19A134022P1	Cap. (Used with C801).
	N402P69B6	Washer.(Used to secure T803; 4 required).
	19A115594P3	Gromment.
	4034225P1	Washer: (Used to secure R801).
	7476888P5	Washer: (Used to secure R801).
	7476888P6	Washer: (Used to secure R801).
	19A134024P1	Screw: (Used to secure (R801).
	19A701863P6	Clip loop. (Used to secure W801; 2 required).
	NP281116P1	Nameplate. ("CAUTION" tag).

* COMPONENTS, ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

PRODUCTION CHANGES

Changes in the equipment to improve performance or to simplify circuits are identified by a "Revision Letter" which is stamped after the model number of the unit. The revision stamped on the unit includes all previous revisions. Refer to the Parts List for the descriptions of parts affected by these revisions.

REV A - To prevent fuse F1 from blowing at higher than normal line voltage. Changed F1.



FUSE APPLICATION CHART		
BAND	POWER	FUSE
LOW	50 W	15A
LOW	70 W	20A
LOW	100W	35A ▲
HIGH	35W	15A
HIGH	65W	20A
HIGH	110W	35A ▲
450	20W	10A
450	40W	15A
450	75W	35A ▲
450	100W	35A ▲

NOTE:
CHANGES TO THIS DRAWING MAY AFFECT WIRING DIAGRAM 19D430302, 19D430303, & 19D430304.

220 VAC 50 HZ
✱ CONNECTION SHOWN

INPUT VOLTAGE	CONNECT AT T82
100 VAC 50 HZ	4 TO 6 & 3 TO 5
110 VAC 50 HZ	2 TO 5 & 4 TO 7
123.5 VAC 50 HZ	1 TO 5 & 4 TO 8
200 VAC 50 HZ	3 TO 6
220 VAC 50 HZ	2 TO 7
247 VAC 50 HZ	1 TO 8

POWER SUPPLY IS WIRED FOR 220 VAC, 50 HZ OPERATION. FOR OPERATION ON OTHER INPUT VOLTAGES, REFER TO CONNECTION CHART.

THIS ELEM DIAG APPLIES TO	
MODEL NO.	REV LETTER
PL19D430272G6	A

NOTES:

1. THESE WIRES MUST BE ROUTED SEPARATELY FROM OTHER WIRING OF A801.
2. TERMINATE WITH 19B209260P12.
3. TERMINATE WITH 19B209260P11.
4. TERMINATE THESE 2 WIRES AT A803-G1 UNDER THE HEAD OF THE SCREW.
5. TERMINATE END AT A802-G1 WITH 19B209268P101 & AT G2 WITH 19B209268P103.
6. TERMINATE WITH 19B209260P107.
7. TERMINATE BOTH WIRES IN SAME TERMINAL 19A115795P1.
8. TRANSFORMER WINDING # 13 & # 14 ARE USED ONLY IN POWER SUPPLIES WITH OPTIONS 9689 & 9670 (STANDBY BATTERY CHARGER).
9. TERMINATE WITH TERMINAL 19B209268P107.

50 Hz POWER SUPPLY WITH HUM SUPPRESSION 19D430272G6

* * * * * * * * *

(19D430305, Rev. 3)

MASTR II 50 Hz POWER SUPPLY
WITH HUM SUPPRESSION
19D430272G6
ISSUE 3

SYMBOL	PART NUMBER	DESCRIPTION
A802		**50 Hz POWER SUPPLY AC PANEL ASSEMBLY 19C320779G2**
		——— FUSES ———
F1*	7484390P1	Cartridge, quick blow: 10 amps at 250 v; sim to Bussmann ABC10 or Littelfuse 314010.
	7484390P4	Cartridge, quick blow: 8 amps at 250 v; sim to Bussmann ABC08 or Littelfuse 314008. (Used earlier than REVA).
F3	1R16P8	Cartridge, quick blow: 5 amps at 250 v; sim to Bussmann MTH-5 or Littelfuse 312005.
		——— SWITCHES ———
S1	19B209498P1	Push: DPST, 20 amps at 220 VRMS; sim. to McGill 0811-0188.
		——— TERMINAL BOARDS ———
TB2	19C301087P4	Phenolic: 8 terminals; sim to GE CR151D.
		——— FUSE SOCKETS———
XF1 and XF3	4037402P2	Fuseholder: 15 amps at 250 v; sim to Littelfuse 342001.
		——— MISCELLANEOUS ———
	19B226097G2	Cover.
	19B209920P107	Terminal: Solderless. (6 required).]
	NP276466	Nameplate. ("WARNING" tag).
A803		**HEAT SINK 19C320836G1**
		——— RECTIFIERS ———
CR1 and CR2	19A116524P2	Silicon: sim to 1N2158R, includes N210P20B6 nut.
		——— MISCELLANEOUS ———
	19B226005G1	Heat Sink.
	19A115275P5	Insulator: disk. (Used with CR1 and CR2).
	N210P20B6	Nut: Hex. (Secures CR1 and CR2 to Heat Sink).
	N403P25B6	Lockwasher. (Used with CR1 and CR2).
	19A142689P1	Terminal. E3 and E4.
	N81P13006B6	Screw: Machine. (Secures terminal to CR1, CR2).
	N207P13B6	Nut: Hex. (Secures terminal to CR1, CR2).
	N404P13B6	Lockwasher. (Used with terminal).
A804	19C328488G1	(See Relay Control Board Parts List).

* COMPONENTS, ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES

SYMBOL	PART NUMBER	DESCRIPTION
A805		**HEAT SINK 19C320836G2**
		——— RECTIFIERS ———
CR3 and CR4	19A116524P2	Silicon: sim to 1N2158R, includes N210P20B6 nut.
		——— MISCELLANEOUS ———
	19B226005G1	Heat Sink.
	19A115275P5	Insulator: disk. (Used with CR3 and CR4).
	N210P20B6	Nut: Hex. (Secures CR3 and CR4 to Heat Sink).
	N403P25B6	Lockwasher. (Used with CR3 and CR4).
	19A115276P4	Insulator: Washer. (Used with CR3 and CR4).
	N402P11B6	Washer. (Used with CR3 and CR4).
	19A142689P1	Terminal. E5 and E6.
	N81P13006B6	Screw: Machine. (Secures terminal to CR3, CR4).
	N207P13B6	Nut: Hex. (Secures terminal to CR3, CR4).
	N404P13B6	Lockwasher. (Used with terminal).
		——— CAPACITORS ———
C801	19A134574P2	Liquid: 7 µF ±5%, 660 VRMS; sim. to GE 26P664FB.
C802	19A134033P1	Electrolytic: 49000 µF +50% -10%, 20 VDCW; sim. to GE 92F180ANB.
C803 and CR804	5496520P19	Electrolytic: 48000 µF -10 +100%, 40 VDCW, sim to 86F561M.
		——— RECTIFIERS ———
CR803	19B226282G2	Silicon.
		——— FUSES ———
		Note:To select the correct fuse for F801, refer to the chart on the schematic diagram.
F801	1R11P3	Quick blowing: 10 amps, 250 v; sim to Bussman NON10.
	1R11P4	Quick blowing: 15 amps, 250 v; sim to Bussman NON15.
	1R11P5	Quick blowing: 20 amps, 250 v; sim to Bussman NON20.
	1R11P6	Quick blowing: 25 amps, 250 v; sim to Bussman NON25.
	1R11P7	Quick blowing: 30 amps, 250 v; sim to Bussman NON30.
	1R11P8	Quick blowing: 35 amps, 250 v; sim to Bussman NON35.
		——— JACKS ———
J801		(See W802).

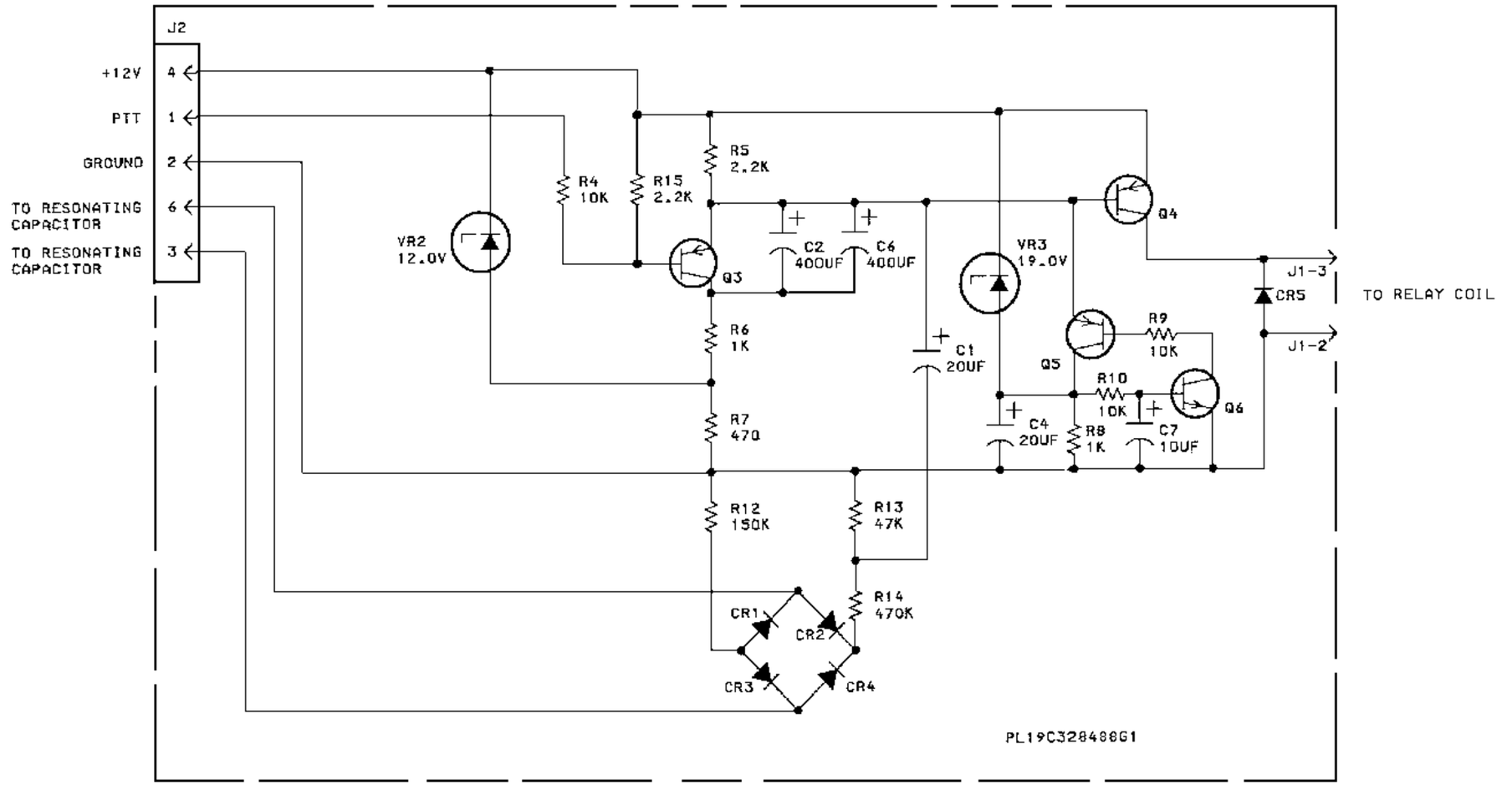
SYMBOL	PART NUMBER	DESCRIPTION
		RELAY ASSEMBLY 19B232626G1
		——— RELAYS ———
K801	19B209492P1	Normally Open Contacts: sim to Magnecraft 22RX134A.
		——— PLUGS ———
P1	19A116659P16	Shell.
		——— MISCELLANEOUS ———
	19A137734G1	Bracket.
	19B209519P1	Polarity tab.
	19A116781P4	Contact, electrical: wire range No. 22-26 AWG; sim to Molex 08-50-0107, (2 required).
	19B232626G2	Harness.
		——— INDUCTORS ———
L801	19B209497P1	Reactor: 1 µH minimum, 27 amps, .01 ohms max.
L802	19B226151G1	Reactor: 10 µH minimum, 2.5 amps, .1 ohms max.
		——— RESISTORS ———
R801	2R17P21	Wirewound: 10 ohms ±5%, 50w; sim to Ward Leonard K41389-1.
		——— TRANSFORMERS ———
T803	19C330340G3	Power: 50 Hz, Primary input: 100/110/123.5/200/220/247, ±20% Secondary output A: 3.0 amps. Secondary output B: 13.4 vat 27.0 amps.
		——— CABLES ———
W801	19B233188G1	Cable: Power cord, 3 conductor. (Includes P801).
W802		**CABLE ASSEMBLY 19B233189G1**
		——— JACKS ———
J801		Connector includes:
	19B209288P3	Shell.
	19B209288P1	Contact, electrical: wire size No. 14-20 AWG; sim to Molex 02-09-1101. (6 required).
	7491823P9	Terminal: Solderless.
W803		**HARNESS ASSEMBLY 19B232825G2**
	4029484P11	Terminal, quick disconnect: 22-18 AWG, sim to AMP 41772. (2 required).
	19B209151P1	Terminal.
	5490407P4	Gromment.

SYMBOL	PART NUMBER	DESCRIPTION
W804		**HARNESS ASSEMBLY 19B233191G1**
		——— PLUGS ———
P2	19A116659P80	Shell.
		——— MISCELLANEOUS ———
	19B209260P12	Terminal. (2 required).
	19B209151P1	Terminal. (2 required).
	19B2091519P1	Polarity tab.
	19A116781P3	Contact, electrical: wire range No. 16-20 AWG; sim to Molex 08-50-0105. (5 required).
	19B209288P1	Contact, electrical: wire range No. 14-20 AWG; sim to Molex 02-09-1101.
		——— FUSE SOCKETS———
XF801A	19B216021G7	Fuseholder. Includes:
	19D413045P1	Base.
	19B205950P1	Fuse clip. (2 required).
	N117P15006B6	Screw: tap. (2 required).
	19A115942P1	Insert: threaded. (2 required).
		——— MISCELLANEOUS ———
	19C320748G1	Cover. (A802).
	19C320637G1	Cover: Rear. (Mounts XF801 and J801).
	19D417192P1	Cover: Bottom.
	7479571P19	Retainer: Strap; sim to Sprague 4586-2. (Used with C802 thru C804).
	7776855P37	Retainer: Strap; sim to Hudson Falls 302C920P211. (Secures C801; 2 required).
	19A134022P1	Cap. (Used with C801).
	N402P69B6	Washer.(Used to secure T803; 4 required).
	19A115594P3	Gromment.
	4034225P1	Washer: (Used to secure R801).
	7476888P5	Washer: (Used to secure R801).
	7476888P6	Washer: (Used to secure R801).
	19A134024P1	Screw: (Used to secure (R801).
	19A701863P6	Clip loop. (Used to secure W801; 2 required).
	NP281116P1	Nameplate. ("CAUTION" tag).
	19B232828G1	Shield. (Used over K801).

PRODUCTION CHANGES

Changes in the equipment to improve performance or to simplify circuits are identified by a "Revision Letter" which is stamped after the model number of the unit. The revision stamped on the unit includes all previous revisions. Refer to the Parts List for the descriptions of parts affected by these revisions.

REV A - To prevent fuse F1 from blowing at higher than normal line voltage. Changed F1.



ALL RESISTORS ARE 1/2 WATT UNLESS OTHERWISE SPECIFIED AND RESISTOR VALUES IN OHMS UNLESS FOLLOWED BY K-1000 OHMS OR MEG-1,000,000 OHMS. CAPACITOR VALUES IN PICOFARADS (EQUAL TO MICROMICROFARADS) UNLESS FOLLOWED BY UF-MICROFARADS. INDUCTANCE VALUES IN MICROHENRYS UNLESS FOLLOWED BY MH-MILLIHENRYS OR H-HENRYS.

MODEL NO	REV LETTER
PL19C328488G1	C

RELAY CONTROL BOARD
19C328488G1
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(19C328489, Sh. 1, Rev. 5)

RELAY CONTROL BOARD A804
19C328488G1
ISSUE 4

SYMBOL	PART NUMBER	DESCRIPTION
		— — — — — CAPACITORS — — — —
C1	19A115680P3	Electrolytic: 20 µF +150 -10%, 25 VDCW; sim to Mallory Type TTX.
C2	19A115680P24	Electrolytic: 400 µF +150 -10%, 18 VDCW; sim to Mallory Type TTX.
C4	19A115680P3	Electrolytic: 20 µF +150 -10%, 25 VDCW; sim to Mallory Type TTX.
C6	19A115680P24	Electrolytic: 400 µF +150 -10%, 18 VDCW; sim to Mallory Type TTX.
C7*	19A701534P7	Tantalum: 10 µF ±20%, 16 VDCW.
		— — — — — RECTIFIERS — — — —
CR1 thru CR4	T324ADP1061	Silicon; 600 PRV, 1000 mA max; sim to 1N4006.
CR5	T324ADP1051	Silicon; 600 PRV, 1000 mA max; sim to 1N4005.
		— — — — — — JACKS — — — — —
J1	19A137733G2	Connector: 2 terminals.
J2	19A137733G1	Connector: 6 terminals.
	19A116659P30	Connector: printed wiring: 8 contacts rated at 5 amps; sim to Molex 09-66-1081.
		— — — — — TRANSISTORS — — — —
Q3	19A115562P2	Silicon, PNP; sim to Type 2N2904A.
Q4	19A116375P1	Silicon, PNP.
Q5	19A700022P1	Silicon, PNP; sim to Type 2N3906.
Q6	19A700023P1	Silicon, NPN; sim to Type 2N3904.
		— — — — — RESISTORS — — — —
R4*	19A700113P87	Composition: 10K ohms ±5%, 1/2 w.
R5	19A700113P71	Composition: 2.2K ohms ±5%, 1/2 w.
R6	19A700113P63	Composition: 1K ohms ±5%, 1/2 w.
R7	19A700113P55	Composition: 470 ohms ±5%, 1/2 w.
R8	19A700113P63	Composition: 1K ohms ±5%, 1/2 w.
R9 and R10	19A700113P87	Composition: 10K ohms ±5%, 1/2 w.
R12	3R77P154J	Composition: 150K ohms ±5%, 1/2 w.
R13	19A700113P103	Composition: 47K ohms ±5%, 1/2 w.
R14	3R77P474J	Composition: 470K ohms ±5%, 1/2 w.
R15*	19A700113P71	Composition: 2.2K ohms ±5%, 1/2 w.
		— — — VOLTAGE REGULATORS — —
VR2	19A116325P4	Zener: 5 W, 12 v; sim to Type 1N5349.
VR3	4036887P16	Zener: 500 mW, 19 v. nominal.
		— — — — MISCELLANEOUS — — —
	19A701332P4	Insulator, washer: nylon, (Used with Q3).

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PRODUCTION CHANGES

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19C328488G1

REV. A - To improve operation of the power supply with Hum Suppression, removed Q1, Q2, R1, R2 & R3 and added R15.

REV. B - To reduce switching sensitivity on the PTT line, values of R4 and R15 were reversed.

REV. C - To slow response time of the over-voltage protection circuit in the Hum Suppression kit, added C7 (19A700003P7): 10 µF capacitor.

LBI-30868

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